Brooklyn Botanic Garden

INTERNATIONAL FLOWER SHOW

LEAFLETS (N.S.) No. 7
MARCH 5, 1951

99 plants
for the
CORNER GARDEN
– late winter
early spring

FEBRUARY

MARCH

APRIL

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37 Crocus chrysanthus—“*A. P. Bowles*”
38 Crocus chrysanthus—“*Canary Bird*”
39 Crocus chrysanthus—“*E. A. Bowles*”
40 Crocus Fleischeri
41 Crocus Sieberi
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44 Crocus susianus—*Cloth of Gold*
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54 Erythronium tuolumnense—*Golden Easter-lily*
55 Galanthus nivalis—*Common Snowdrop*
56 Helleborus niger—*Christmas-rose*
57 Iberis sempervirens—*Evergreen Candytuft*
58 Iris cristata
59 Iris histrioides
60 Iris pumila—“*Bride*”
61 Iris pumila—“*Azure*”
62 Iris pumila—“*Marocain*”
63 Iris pumila—“*Prairie Gem*”
64 Iris reticulata
65 Mertensia virginica—*Virginia Cowslip, v. Bluebells*
66 Narcissus Bulbocodium—*Petticoat Daffodil*
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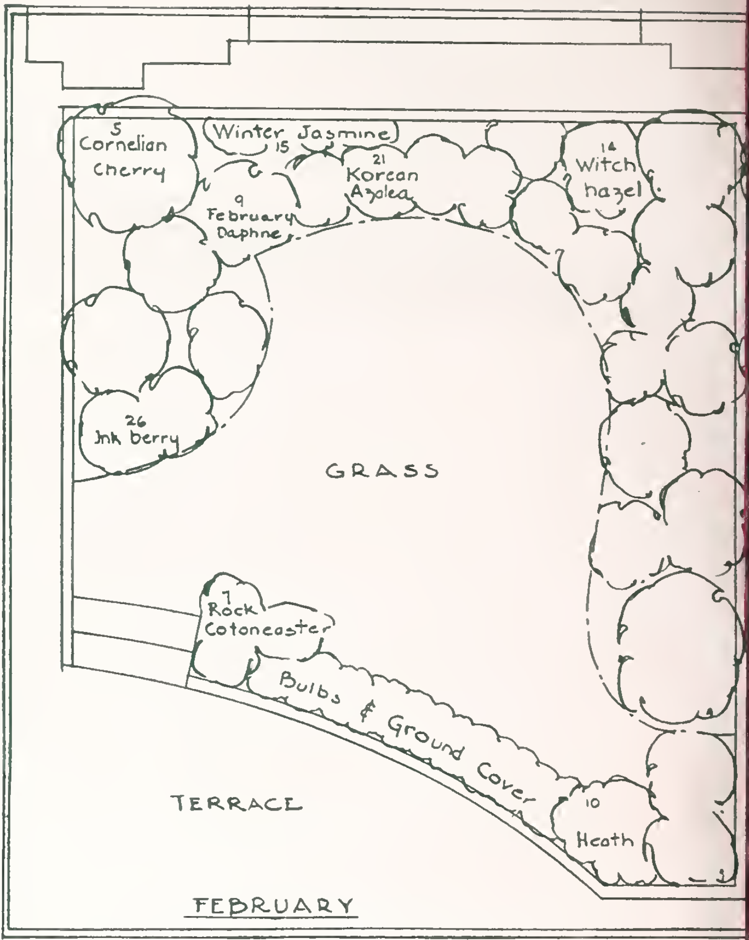
99 Tulipa patens

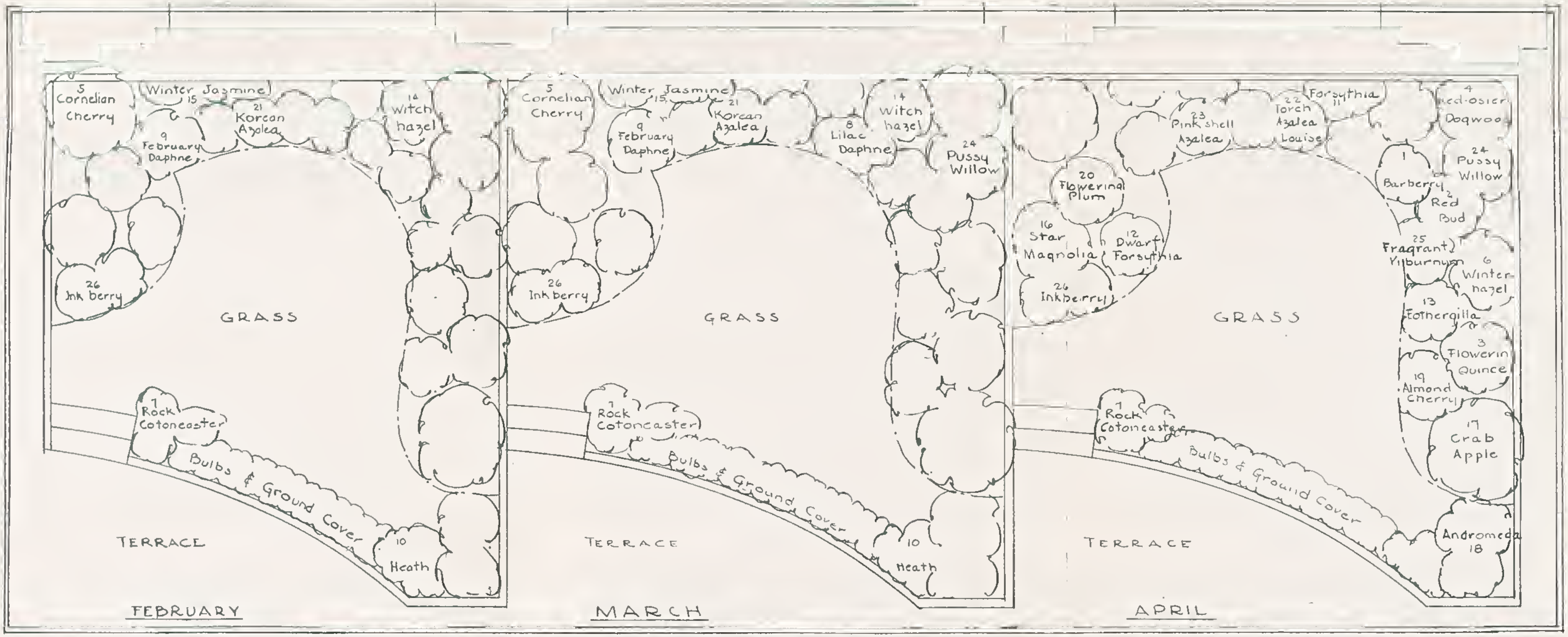


The plants in this exhibit come from many parts of the world. Plants growing out of doors are subject to varying weather conditions, so that in a very long severe winter even native plants are late in coming out. Warm winter days may bring winter jasmine, witch-hazel, Cornelian-cherry, and Korean rhododendron into flower in January and February.

There are some very early-flowering trees, such as the redbuds, which add much to the spring landscape and are not used as often as they should be.

Numerous varieties of tulips and crocuses are available for getting gardens off to an early start. These bulbs grow best in a well-drained soil where summer sun can ripen them. This is especially so with the *species* tulips; although *Tulipa dasystemon* seems to flourish with no trouble at all, some of the other species are decidedly fussy.

The *species* crocuses will grow without any difficulty, unless mice get too active. Some of them in-



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The *species* crocuses will grow without any difficulty, unless mice get too active. Some of them increase rapidly, soon looking as if they belonged in their adopted surroundings.

A fall of snow will sometimes make early spring flowers close up, but when it melts they will reopen as if nothing had happened.

These plants are all well worth growing for the pleasure they bring in the dreary months of the year.

Woody Plants

1 Berberis Julianae—*Wintergreen Barberry*
2 Cercis chinensis—*Chinese Redbud—Judas-tree*
3 Chaenomeles lagenaria—*Flowering Quince*
4 Cornus stolonifer—*Red-osier Dogwood*
5 Cornus mas—*Cornelian-cherry*
6 Corylopsis pauciflora—*Winter Hazel*
7 Cotoneaster horizontalis—*Rock-spray*
8 Daphne Cenkwa
9 Daphne Mezereum—*February Daphne*
10 Erica carnea—*Spring Heath*
11 Forsythia spectabilis—*Golden-bells*
12 Forsythia viridissima var. *bronxensis*
13 Fothergilla major—*Large Fothergilla*
14 Hamamelis mollis—*Witch-hazel*
15 Jasminum nudiflorum—*Winter Jasmine*
16 Magnolia stellata—*Star Magnolia*
17 Malus floribunda var. Scheideckeri—*Showy Crabapple*
18 Pieris japonica—*Andromeda*
19 Prunus glandulosa—*Almond Cherry*
20 Prunus triloba—*Flowering Plum*
21 Rhododendron mucronulatum—*Korean Azalea*
22 Rhododendron obtusum var. "Louise"—*Torch Azalea*
23 Rhododendron Vaseyi—*Pink Shell Azalea*
24 Salix discolor—*Pussy Willow*
25 Viburnum fragrans
26 Ilex glabra—*Inkberry—Winterberry*
27 Daphne Cneorum

Herbaceous Plants

28 Adonis amurensis—*Pheasant-eye*
29 Anemone Pulsatilla—*Pasque Flower*
30 Alyssum saxatile—*Golden-tuft*
31 Arabis albida—*Wall Rock-cress*
32 Arabis procurrens—*Rock-cress*
33 Brunnera macrophylla (Anchusa myosotidiflora)
34 Chionodoxa Luciliae—*Glory-of-the-snow*
35 Chionodoxa sardensis
36 Crocus biflorus—*Scotch Crocus*

37 Crocus chrysanthus—“*A. P. Bowles*”
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NOTES

INTERNATIONAL FLOWER SHOW
EXHIBIT NUMBER

BROOKLYN BOTANIC GARDEN
LEAFLETS

NEW SERIES NO. 2 BROOKLYN, NEW YORK MARCH 15, 1947

PLANT FOODS AND SOILS

Ten Questions and Answers

● FROM WHAT SUBSTANCES ARE PLANTS MADE?

Largely water, certain chemical elements in solution, and fats, carbohydrates and proteins.

● DO PLANTS GET THESE BUILDING MATERIALS FROM THE SOIL?

Soil furnishes such elements as nitrogen, potassium (potash), sulphur, phosphorus, calcium, magnesium and iron. Carbon comes from the carbon dioxide of the atmosphere. The plant itself combines these elements into carbohydrates, proteins, and fats or oils.

● DO PLANTS REALLY REQUIRE SOIL?

So long as the necessary nutrient elements are supplied, plants get along well without soil. Witness the crops harvested by the U. S. Air Forces on soilless Ascension Island: plants were grown in gravel and the minerals were supplied as a "nutrient solution." The necessary elements must all be present—in the proper amounts—in any nutrient solution, regardless of whether the plants are grown in gravel, sand, water or soil.

● WHAT ADVANTAGES HAS SOIL — OVER SOILLESS — GARDENING?

Soil-gardening is simpler for most of us. Soil anchors the plants and supplies (seldom too abundantly) all of the needed chemical elements except carbon. We do just the weeding.

### ● OF WHAT IS SOIL COMPOSED?

—A mixture of things: rock, organic matter (decaying leaves, etc.), chemical elements in solution and microorganisms; water and air are important, too. Soils differ according to their make-up. In gravelly soil the rock particles are large; in clay, they are small.

- **HOW IS COMPOST MADE?**

(see last page)

● WHY ARE MICROORGANISMS (MAINLY BACTERIA AND FUNGI) AN IMPORTANT CONSTITUENT OF SOIL?

For want of microorganisms, a soil would be lost—they are the agents that continually renew the soil. By breaking down (decaying) the dead bodies or refuse of plants and animals the microorganisms return to the soil those building blocks—nitrogen, potassium, sulphur, etc.—which are indispensable to the growth of new plants. Some of them change the nitrogen of the air into soluble salts, which are then available to plants.

● OF WHAT IS THE ORGANIC MATTER OF THE SOIL COMPOSED?

Organic matter decayed until its origin can no longer be determined is called "humus." Such materials as peat, manure, leaf mold, plant refuse, and "green manures"—winter rye or other plants spaded under—go into the formation of organic matter.

● HOW CAN POOR SOIL BE ENRICHED?

Fertilizer! If low in organic matter, enrich it with compost, peat, green manures, etc. If certain chemical elements are low—as determined by your State Agricultural Experiment Station—they can be added in the form of nitrogen, phosphorus, and potassium fertilizers.

● WHAT IS A COMPLETE FERTILIZER?

One containing at least the major chemical elements necessary for growth (N—nitrogen; P—phosphorus; K—potassium).

BE A COMPOST-MAKER

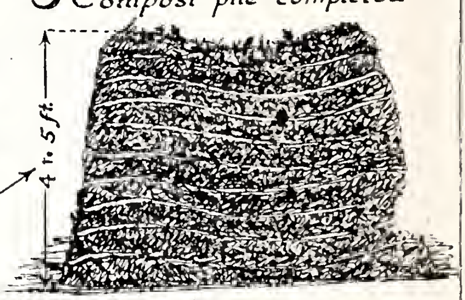
NOT A LEAF-BURNER!

Put your garden trash to work — as compost — for the improvement of your soil.

1st. Step- a layer of leaves, straw, grass clippings, garden plant material

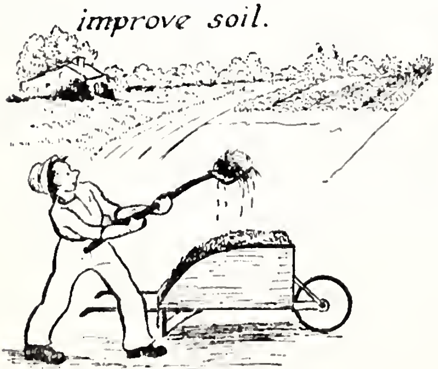
2 Sprinkle. Add fertilizer and lime. Continue layers until

3 Compost pile completed



4 Turn over the pile in 2 or 3 months.

6 Compost going to work to improve soil.



5 at last — A good compost 9 to 18 months later.

M. LeT. CARROLL

Brooklyn Botanic Garden

INTERNATIONAL FLOWER SHOW

LEAFLETS (N.S.) No. 8
MARCH 16, 1952

A GARDEN FOR EASY MAINTENANCE

WHICH

COULD BE YOURS

A TIME-BUDGET GARDEN

LATE MAY

JUNE

For further garden information see below

THE WORK GARDEN CAN BE FUN

A properly organized and equipped work garden can afford many hours of enjoyable entertainment and accomplishment.

In the little work and storage house are bins for winter storage of potting soil, peat moss, and leaf-mold. It is possible then to do potting and flatting on the late winter days when the weather is not too cold.

A calendar tacked up on the wall with the approximate starting dates for annuals, tender perennials, and perennials, when to take cuttings, when to pot bulbs for forcing, etc., will help to keep the work spread out and properly timed.

The cold frame will give you a month's jump on nature, permitting you to start cuttings, plant seed, and make divisions of perennials long before it is possible outside.

Evergreen cuttings to be rooted in the cold frame should be taken in June or July—cotoneaster, holly, taxus, pieris. Or try hardwood cuttings in the fall (October—November) of firethorn, cotoneaster, barberry, laburnum.

Heathers will root easily if cuttings are taken any time from the time new growth has hardened, through the fall when hardwood cuttings can be taken.

Good topsoil can be made from ordinary soil by the addition of humus and chemicals. Sandy or clay soil can be made pliable and nutritious and a good water holder by the addition of about one-third peat moss, leaf-mold, or compost. Several days before using, the addition of a cup of 5-10-5 fertilizer to each bushel of soil, will round out the mixture. This is a good potting, or flatting, soil for most outdoor plants.

The little work garden or nursery might go through several stages of development. If a gardener decided to grow his own plants, he would find that most of the available space for a few years would be taken up largely with plants which he was "growing on" for the shrub border.

As these plants were moved out to their permanent positions in the shrub border, space would become available to use for plants to fill the bright spots. As more plants were moved into their permanent locations, the gardener might start a cutting garden, or perhaps a kitchen garden. Plants for seasoning or salad might be thyme, sweet basil, parsley, tomatoes, lettuce. Right from the start there is always room for a few herbs and easily grown condiments in the corners of the garden. A border of mint or sage, a clump of chives, and many other herbs fill up the corners and crowd out the weeds.

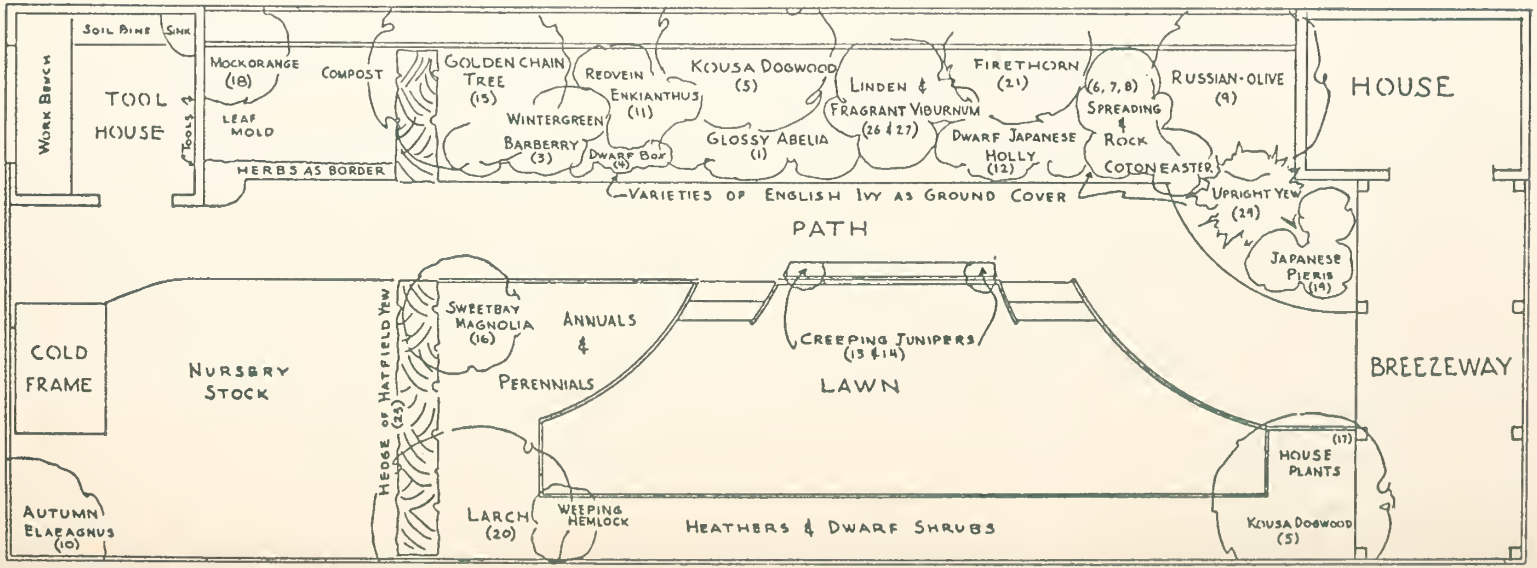
To keep the garden from looking drab, there must be a small spot of color. And this spot should have color from early spring to late fall. This is where the ingenuity of the gardener and the fun of planning come in. Plants started in the work garden can be moved into the bright spot when the plants there begin to fade. It is amazing how a little planning can produce such a continuously changing panorama of bloom.

The same idea can be pursued with the shrub border. Faster-growing plants can be replaced as they become too large, by slower-growing, more desirable plants which have been started in the nursery. A Chinese lilac in the corner of the garden, pretty for a few years, but eventually too bulky, might be replaced by the laburnum. A forsythia planted by the garden gate might be pretty, but soon it becomes floppy and woody. By this time the magnolia is big enough to make a showing and can be moved into place. If you plan before you plant, your efforts will be rewarded. Careful planning will save both time and money in the long run.

For further garden information see below

A WORK GARDEN

A SMALL PLEASURE GARDEN
LATE MAY & JUNE



NO.	COMMON NAME	LATIN NAME	BLOOMING PERIOD
1.	Glossy Abelia	*Abelia grandiflora*	June-Oct.
2.	Azalea	*Azalea* hybrids	May-June
3.	Wintergreen Barberry	*Berberis julianae*	April-May
4.	Dwarf Box	*Buxus microphylla var. compacta*	
5.	Kousa Dogwood	*Cornus kousa*	June
6.	Cotoneaster	*Cotoneaster ambigua*	May
7.	Rock Cotoneaster	*Cotoneaster horizontalis*	June
8.	Spreading Cotoneaster	*Cotoneaster divaricata*	June
9.	Russian Olive	*Elaeagnus angustifolia*	May-June
10.	Autumn Elaeagnus	*Elaeagnus umbellata*	
11.	Red-vein Enkianthus	*Enkianthus campanulatus*	May
12.	Dwarf Japanese Holly	*Ilex crenata var. helleri*	
13.	Prostrate Juniper	*Juniperus squamata var. prostrata*	
14.	Waukegan Juniper	*Juniperus horizontalis var. douglasi*	
15.	Golden Chain Tree	*Laburnum watereri*	Early June
16.	Sweet Bay Magnolia	*Magnolia virginiana*	June
17.	Oregon Holly	*Mahonia aquifolium*	April-May
18.	Mock Orange	*Philadelphus* Minnesota Snowflake	June-July
19.	Japanese Pieris	*Pieris japonica*	April-May
20.	Golden Larch	*Pseudolarix amabilis*	
21.	Firethorn	*Pyracantha coccinea*	May
22.	Cutleaf Stephanandra	*Stephanandra incisa*	June
23.	Hatfield Yew	*Taxus media var. hatfieldi*	
24.	Upright Japanese Yew	*Taxus cuspidata*	
25.	Weeping Hemlock	*Tsuga canadensis var. pendula*	
26.	Linden Viburnum	*Viburnum dilatatum*	May-June
27.	Fragrant Viburnum	*Viburnum carlesi*	April-May
28.	English Ivy	*Hedera helix var. conglomerata*	
29.	Bar Harbor Juniper	*Juniperus horizontalis* Bar Harbor	
30.	Perennial Candytuft	*Iberis sempervirens*	June-August
31.	Spreading English Yew	*Taxus baccata var. repandens*	
32.	Chinese Juniper	*Juniperus chinensis*	
33.	Spike Heath	*Bruckenthalia spiculifolia*—fls. pink	
34.	Irish Bell Heather	*Daboecia cantabrica*—deep purple bells, June-Oct.	
35.	Heather or Ling	*Calluna vulgaris pygmaea*—fls. most of summer	
36.	” ”	” ” *aurea*—fls. lavender, late summer	
37.	” ”	” ” *minima*—fls. purple, Aug.-Sept.	
38.	” ”	” ” *alba minima*—fls. white, Aug.-Sept.	
39.	” ”	” ” *minima* Smith's var. fls. purple Aug.-Sept.	
40.	” ”	” ” *alba spicata*—summer	
41.	” ”	” ” *rigida*—fls. white, Aug.-Sept.	
42.	” ”	” ” Elsie Frye—fls. double, white	
43.	” ”	” ” Kuphaldte—fls. lavender, July-Sept.	
44.	” ”	” ” Camla—fls. double, soft pink	
45.	” ”	” ” County Wicklow—fls. double, shell pink	
46.	” ”	” ” *plena*—fls. double, pink, summer	
47.	” ”	” ” *foxi nana*—small bright green mat	
48.	” ”	” ” *cuprea*—foliage bronze in the fall	
49.	” ”	” ” *hypnoides*—fls. deep pink	
50.	” ”	” ” Mrs. R. H. Gray—carpet of pink flowers	
51.	” ”	” ” *alba hammondi*—fls. white, summer	
52.	” ”	” ” *alba erecta*—fls. white	
53.	” ”	” ” J. H. Hamilton—fls. rosy pink, summer	
54.	Cornish Heath	*Erica vagans alba*—fls. white bells in spring, 15"	
55.	” ”	” ” *nana*—fls. white, very dwarf	
56.	” ”	” ” St. Keverne—fls. clear pink	
57.	Cross Heath	” *tetralix*—prostrate, fls. rose color, June-Oct.	
58.	” ”	” ” *mackaiana plena*—fls. double, red, June-Oct.	
59.	Spring Heath	” *carnea* Spring Wood—fls. pink, March-April	
60.	Twisted Heath	” *cinerea var. alba*—June-Sept.	
61.	” ”	” ” C. D. Eason—fls. red, compact plant	
62.	” ”	” ” Golden Drop—dwarf plant, bronze foliage	
63.	Bog Rosemary	*Andromeda polifolia var. montana*	

PLAN AND PLANT FOR EASIER GARDENING

The lawn is on one level and is flat, making it easy to mow and water.

The edging of brick around the lawn eliminates time-consuming edging.

Summer mulches before the heat of July and August, reduce back-breaking weeding to a minimum. Mulches such as peatmoss, Mul-tex, sawdust, wood shavings, spent hops, or partially rotted leaves hold water and reduce watering to a minimum.

Soil soakers in plant beds, turned on slowly and allowed to run all day two days during a week, solve the problem of watering shrubs and flower beds.

Pot gardening of annual and perennial flowers insures continued color from spring to fall in the bright spot. Small concentrations of color (as here) are easier to care for and more interesting and satisfying.

The rough-cut railroad ties, brick, or stone add interest to the garden with their individual textures and patterns.

Some plants used here are extremely slow-growing and expensive to buy in the sizes shown. This garden is pictured as it might look ten or more years after the original planting. If a finished look is necessary immediately after planting, one must be prepared to pay for it. If you wish to make your gardening fun, you might begin with "cheap" fast-growing shrubs, at the same time buying small plants of the more choice, slow-growing kinds such as are shown here and "grow them on" in the little nursery. As the fast-growing items outgrow their spaces in the garden, replace them with the slower-growing materials which have matured in the nursery.

An all-purpose spray every two weeks should keep the insect and fungus problem at a minimum. Don't wait until the bugs take over.

A suggested round of color for the bright spots might be bulbs for early spring followed by fibrous-rooted begonias, and English daisies from the cold frame, then tender perennials such as geraniums for sun, impatiens for shade, annuals such as dwarf dahlias, marigolds, pansies, and snapdragons, and perennials such as iberis or chrysanthemums.

House plants brought out of doors and plunged in the light shade in a corner of the garden will need less care during the summer months and will be ready to bring inside again in the fall.

SPRING 1952
Weed killers
Growth inducers

SUMMER 1952
Trimming and
Pruning

AUTUMN 1952
Rock Gardens

WINTER 1952
Digest of Year's
Best Articles

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Brooklyn Botanic Garden Leaflet, New Series No. 3

EASTERN REGIONAL CONFERENCE

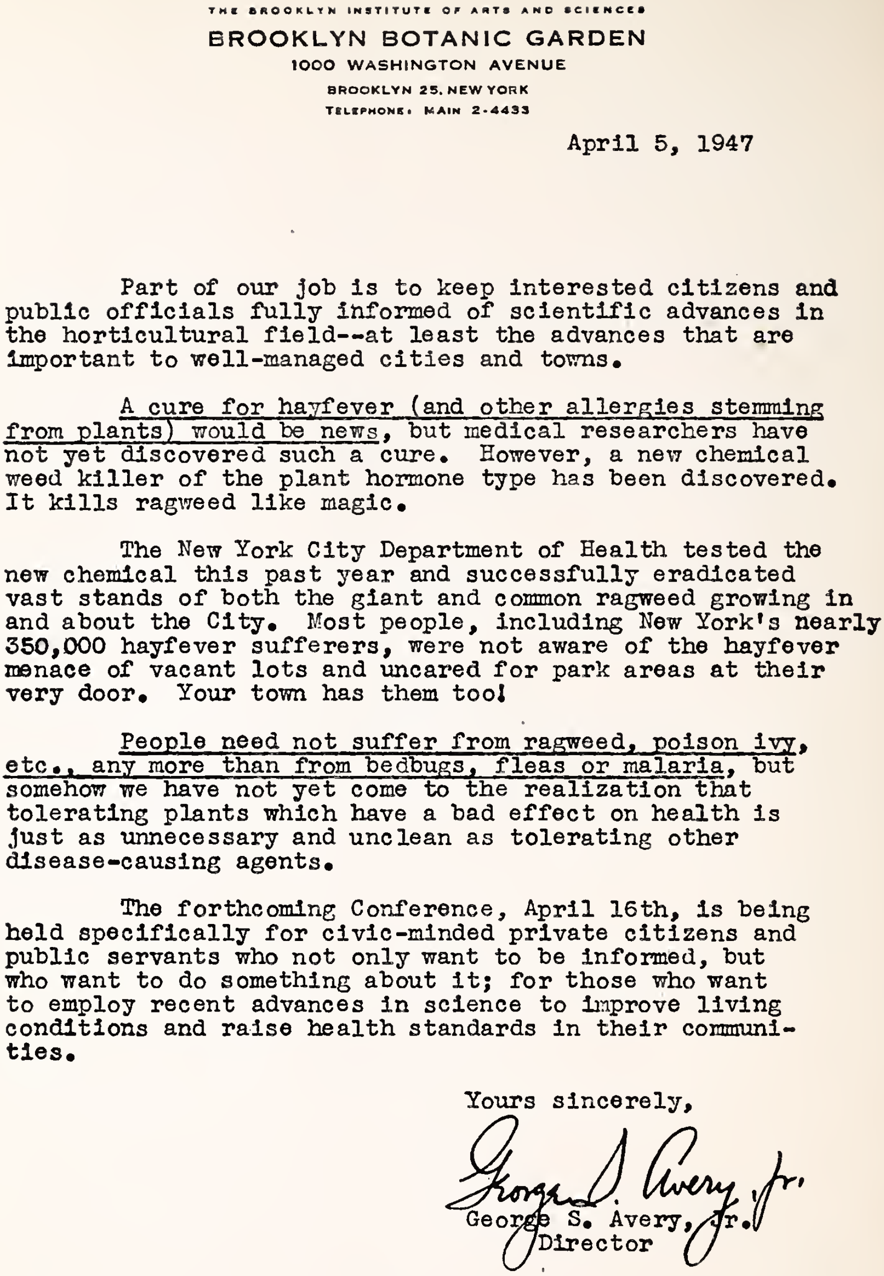
ON

THE CONTROL OF PLANTS HARMFUL AND ANNOYING TO MAN

(As reported by Matthew A. Bassity)

Sponsored jointly by the Brooklyn Botanic Garden
and the Department of Health of the
City of New York

Held at
THE BROOKLYN BOTANIC GARDEN
Brooklyn, New York
April 16, 1947



THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES
BROOKLYN BOTANIC GARDEN
1000 WASHINGTON AVENUE
BROOKLYN 25, NEW YORK
TELEPHONE: MAIN 2-4433

April 5, 1947

Part of our job is to keep interested citizens and public officials fully informed of scientific advances in the horticultural field--at least the advances that are important to well-managed cities and towns.

A cure for hayfever (and other allergies stemming from plants) would be news, but medical researchers have not yet discovered such a cure. However, a new chemical weed killer of the plant hormone type has been discovered. It kills ragweed like magic.

The New York City Department of Health tested the new chemical this past year and successfully eradicated vast stands of both the giant and common ragweed growing in and about the City. Most people, including New York's nearly 350,000 hayfever sufferers, were not aware of the hayfever menace of vacant lots and uncared for park areas at their very door. Your town has them too!

People need not suffer from ragweed, poison ivy, etc., any more than from bedbugs, fleas or malaria, but somehow we have not yet come to the realization that tolerating plants which have a bad effect on health is just as unnecessary and unclean as tolerating other disease-causing agents.

The forthcoming Conference, April 16th, is being held specifically for civic-minded private citizens and public servants who not only want to be informed, but who want to do something about it; for those who want to employ recent advances in science to improve living conditions and raise health standards in their communities.

Yours sincerely,

George S. Avery, Jr.

George S. Avery, Jr.
Director

(*Copy of letter inviting participants to the conference.*)

PROGRAM

• **Morning Session** (10:45 A.M.) Presiding:	Marjorie Hillis Roulston, President of the Auxiliary
New Methods of Weed Control	George S. Avery, Jr., Director, and Conrad B. Link, Horticulturist of the Garden
Demonstrations	
Open Forum	
• **Luncheon** (12:15 P.M.)	Followed by short trip to special points in the Garden
• **Afternoon Session** (1:30 P.M.) Presiding:	Alfred H. Fletcher, Director, Bureau of Sanitary Engineering, Department of Health of the City of New York
Plants and Allergies	Roger P. Wodehouse (World authority on pollen and hay fever), Lederle Research laboratories
Community Organization for Large Scale Control of Allergy-Causing Plants	Alfred H. Fletcher
A Town with Poison Ivy Control	Mrs. James A. Funkhouser, President, New Hampshire Federation of Garden Clubs
Open Forum	
Movies on Weed Control	

NEW METHODS OF WEED CONTROL

Proposed Solution for Problem of Noxious Weeds

DR. GEORGE S. AVERY, Jr., *Director of the Garden*

IN CALLING this conference together, we had in mind two main objectives: first, to mobilize public opinion against tolerating plants that are detrimental to health; second, to show the public how to recognize ragweed, poison ivy and other plants equally troublesome, how to destroy them and how to organize the community to carry out a program of eradication.

The plants detrimental to health are weeds, and a weed is merely a plant growing where it is not wanted. We must remember that weeds are often advantageous plants; their growth frequently prevents soil erosion.

The march of weeds into lawns, gardens and fields is only the natural "urge" for particular plants to blanket the earth. In attempting to control weeds, we are actually trying to upset the natural sequence of vegetation. This is the essence of gardening, lawn making and farming.

The most common weeds dangerous to the touch are poison ivy and poison sumac. These plants can be avoided if one recognizes them. But for the general welfare, they should be eliminated.

Ragweed is another matter. Its pollen is in the air for about two months each year. Almost 90 per cent of autumn hayfever can be traced to it. Breathing the pollen is unavoidable and the only real solution for hayfever sufferers is complete eradication of the common and giant ragweeds.

NO AFTER EFFECTS

Because hayfever does not deform, leave scar tissue or weakened hearts, people take the disease for granted and endure their annual, periodic discomfort. But that does not make their suffering any the less real. An acute dose of hayfever is highly discomforting and very unnecessary if we put to work the fruits of recent scientific research.

Plant scientists have developed a new chemical "tool" which with simple spraying destroys ragweed and many other noxious plants. This tool, "2,4-D," is being widely used, though only known as an herbicide for the past three years.

2,4-D and ammate, another relatively new weed-killing chemical, provide a team for simple and inexpensive elimination of poison ivy, poison sumac and ragweed.

Last season New York worked hard on controlling ragweed and managed to get an almost complete kill in badly infested areas. But New York can't do it alone—any more than vaccination of New Yorkers would immunize all Americans against smallpox. Noxious plants grow everywhere and communities must recognize and deal effectively with the problem.

The development of 2,4-D has paved the way for virtual elimination of hayfever. What we are trying to say is this: "Here is a new and highly effective tool; this is how it is used; go back to your communities armed with these facts and organize your own weed control program—at least for plants detrimental to health.

Widespread adoption of the methods to be explained by the speakers who follow can bring relief to untold thousands.

◆

NEW METHODS OF WEED CONTROL

Recommended Use of 2,4-D and Ammate; Some Precautions

DR. CONRAD B. LINK, *Horticulturist for the Garden*

DR. LINK spoke on the control of weeds and shrubs in uncultivated areas. He recommended ammate (ammonium sulfamate) for destruction of poison ivy and mentioned other kinds of weed killers that have found use in agriculture. But, 2,4-D has proved to be an important new selective weed killer.

Detailed instructions supplied with all commercial forms of 2,4-D should be followed with care, he emphasized. The solution used in spraying shrubs and large plants along roadsides must be twice the strength of that used for lawns. Even then a second application is necessary sometimes.

A second spraying of 2,4-D (dichlorophenoxyacetic acid) definitely is necessary to kill weeds, such as poison ivy, that grow in the shade. However, the ester forms of 2,4-D, which are on the market, are sufficiently potent to destroy this type of plant.

For destruction of ragweed, the same solution recommended for lawns, 1 to 1,000 is effective. It can be sprayed right up until the plant begins to flower and even at that late date will prevent the shedding of pollen. It works faster on young plants; as the plant matures—after flowering—the action of 2,4-D is slower.

If spraying is delayed until late in the season a solution of 1 to 2,000 will stop pollination. It won't necessarily kill the plant but the first frost will accomplish this end.

Dr. Link listed some precautions to be observed in using 2,4-D:

- Though it does not injure most grasses, it does kill most broad leaved plants. Care must be taken that it hits only the plants to be killed.
- To obtain greatest effect, it should be sprayed on actively growing plants. (Any condition that favors active growth favors the killing action of 2,4-D.)
- Temperature should be between 60 and 80 degrees for best results. At cooler temperatures 2,4-D is effective but the killing action is slower.
- Four to six hours are required for it to be absorbed by a plant. Heavy rain in less than this time means a second spraying.
- Soap and warm water in spray tank, hose and nozzle, followed by two warm water rinses, will clean the equipment sufficiently to make it safe for later use in spraying fungicides and insecticides.
- Use only enough soluton to wet foliage—when leaves begin to drip, you have sprayed enough.

* * *

Some trade names for 2,4-D

2,4-Dow Weed Killer
Tufor
Weedone
Root-an-all Weed Killer
Chipman 2,4-D Weed Killer
Weed-No-More
Scotts 4-X
2, 4 WeeDust
Dandy-Kill

PLANTS AND ALLERGIES

Properties of Hayfever-Causing Plants—Most Important Kinds

DR. ROGER P. WODEHOUSE, *Authority on Pollen and Hay Fever, of Lederle Research Laboratories, Pearl River, N. Y.*

IN A TALK illustrated with colored lantern slides, Dr. Wodehouse described the types of plants that produce hayfever-causing pollen, specific plants that are harmful and why we have them.

Types of plants that produce hayfever-causing pollen must answer three requirements. These are abundance, buoyancy and allergenic toxicity.

Only plants that are abundant themselves and shed an abundance of pollen can qualify.

Plants producing heavy pollen are harmless in hayfever. The pollen must be capable of being easily dispersed and carried long distances by the wind. The pollen of plants such as ragweed, timothy, oak and birch is so extremely buoyant that it almost becomes a part of the atmosphere and seems to reach its victims wherever they go.

There is no correlation between the mode of pollination and the amount of pollen produced. Many hundreds of wind pollinated plants produce far too little pollen to cause hayfever, though it is only among the wind pollinated plants that the hayfever-causers are found.

Hayfever pollen must have allergenic toxicity. Many plants produce great quantities of buoyant but harmless pollen; such pollen is said to lack allergenic toxicity.

Allergenic toxicity runs in plant families. There are only five families of weeds and grasses and about eight of trees in which the pollen possesses allergenic toxicity to a high degree.

RAGWEED MOST IMPORTANT

The most important family is the Compositae (includes sunflower, thistle and many other common plants). It comprises about 20,000 species. Only two small groups within this family contain members which are wind pollinated and produce buoyant pollen. They are the ragweed and sagebrush-mugwort groups.

Ragweed produces more hayfever-causing pollen than all the other plants combined. There are many kinds of ragweed but the most important is the short ragweed which is common in more than half the continent and grows east of the Rocky mountain region.

Ragweed flowers at the same time every year. In New York, it blossoms between August 15 and 20. Susceptibility to hayfever can be determined by the presence or absence of symptoms during this period.

Next in importance to the ragweed group in the production of hayfever-causing pollen is the grass family. While there are about 1,100 kinds of grass in the United States only five are important in hayfever in the northeastern states.

These are sweet vernal grass, June grass, orchard grass, redtop and timothy. They are all agricultural grasses introduced into this country for purposes in which they serve us well. It is mainly as they have escaped from cultivation and grow as weeds in waste places that they cause hayfever.

Trees cause relatively little hayfever. Those that do generally are found along streets and in parks.

In the northeastern states hayfever comes in three distinct seasons, extending from May to September.

Early Spring hayfever is due to the pollen of some of the early-flowering trees, such as oaks, birches and elms.

Early summer hayfever is due to the five common grasses, mentioned above.

Late summer hayfever is due to the common and giant ragweeds.

The five grasses and two ragweeds are among the most important hayfever plants throughout most of the country, except the South and Southwest. While the grasses produce about ten per cent of hayfever-causing pollen, ragweed is responsible for more noxious pollen than all the other plants together.

Botanically most of the plants in both the ragweed and sagebrush-mugwort groups are pioneer weeds and owe their abundance to soil abuses such as unnecessary destruction of the original soil cover, over grazing, deforestation and fire. These weeds are abundant because we have made them so by soil abuse.

* * *

Among the plants that are toxic to the touch are poison ivy, and its variety sometimes called poison oak, and poison sumac. These plants exude oils which can cause dermatitis.

Poison ivy is a variable plant that grows on any type of soil. Pollen from its flower, which is green, does not carry the toxic principle. Its fruit is poisonous when green but loses toxicity when ripe (white).

The roots and stems of poison ivy are toxic but most of the poison is in the leaves. When these are burned the smoke itself is not toxic but dust particles carried by the smoke are poisonous.

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OTHER SPEAKERS

Authorities not on the program but who made important contributions were:

Dr. Gilbert Ahlgren, Rutgers University

Mrs. Edith Bowman, Chairman of Citizens' Anti-Weed Committee, Inc., Cincinnati, Ohio

Dr. William H. Harlow, Syracuse University

Dr. A. E. Hitchcock, Boyce-Thompson Institute for Plant Research

Dr. A. M. S. Pridham, Cornell University

E. L. D. Seymour, Garden Editor of The American Home

Dr. P. W. Zimmerman, Boyce-Thompson Institute for Plant Research

COMMUNITY ORGANIZATION FOR LARGE SCALE CONTROL OF ALLERGY-CAUSING PLANTS

Necessary Elements of a Large City Weed Control Program

ALFRED H. FLETCHER, *Director, Bureau of Sanitary Engineering,*
Department of Health of the City of New York

THERE IS a fundamental approach that must be observed by any organization that wishes to control something within its community. The three basic steps of this approach, as outlined by Mr. Fletcher, are: knowledge of the technical aspects of the problem; knowledge of the community and a knowledge of the mechanics of a successful public relations campaign.

The ideal committee, for a large city where these men would be available, would include three professional men: a botanist for advice on plant controls; an engineer for advice on methods for executing the controls; a doctor or health officer for medical advice.

On any ragweed control project it first would be necessary to enlist the services of someone thoroughly familiar with the scientific and technical aspects of the problem.

Not only would the project need scientific guidance, but it would have to be directed by a person familiar with the community. In each community there are certain key individuals whose support is necessary for a campaign to be successful. The project needs a man who knows these people and can persuade them to assist. Such an individual would know the history of the community. He would know what success previous campaigns had met. He would be cognizant of the legal aspects. This is important since campaigns must work within the framework of the law, or work to change the law.

Of most importance, Mr. Fletcher said, is the fact that this person would know the attitude of local officials. A campaign that is opposed by local officials rides a rough road. Official support is a must for a successful public relations campaign, he said. Publicity for the project must not give the impression that there is implied criticism of the administraton, or that an issue is being raised.

It is strategically good to find out who suffers from hayfever, particularly among people in high places.

Campaign leaders must submerge the idea of credit. When it comes to a scramble for who is to be given credit, squabbles arise and the basic idea becomes lost. This is the reason why some good causes fail.

Finally, a campaign of this kind has to be sold with facts and figures, not by high sounding phrases.

A TOWN WITH POISON IVY CONTROL

How a Small College Town Answered the Challenge

MRS. JAMES A. FUNKHOUSER, *President of New Hampshire Federation of Garden Clubs*

THIS WAS a brief story of how a married couple, later assisted by others, started to clear the poison ivy from their garden and ended as the poison ivy guardians of a considerable section of their home town.

Mrs. Funkhouser was careful to correct the impression that no longer is there any poison ivy in Durham, New Hampshire. But the weed has been controlled within an area of one mile radius from the center of the town.

A demonstration spraying of "ammate" in their garden convinced Mrs. Funkhouser and her husband that it was possible to clear all their property of the weed. Once started they soon found themselves spraying neighbors' gardens. In 1944 the Durham Garden Club adopted the project and bought 125 pounds of ammate.

Since the spraying required careful and conscientious work, the club agreed to confine this part of the project to as few people as possible. Any area that could be reached by car was sprayed. They also made the spraying material available to anyone who could use it.

They used an orchard sprayer but found that covered too wide an area. A pack sprayer was better but made the job too much of a chore. Finally a small high pressure sprayer was employed.

Poison ivy sprayed in 1944 was found the following year to be 50 per cent killed, and in some spots 75 per cent. Only 100 pounds of ammate were used in 1945 and the results, observed last year, proved to be 75 to 95 per cent effective.

Last year only 25 pounds of ammate were used and Mrs. Funkhouser reported that it was hard to find poison ivy to spray.

Experience showed that hot, humid weather, such as the day before a storm, was excellent for spraying for best results. Also, it was found necessary to spray every leaf. Mrs. Funkhouser did not think the weed could ever be completely eradicated because of the poison ivy seeds carried by birds.

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Movies on weed control, in sound and color, can be obtained merely for the asking. Write: Dow Chemical Company, Midland, Michigan, or The Sherwin-Williams Company, Brown St. and Lister Ave., Newark 1, New Jersey.

SUGGESTED PLAN FOR PROMOTING A COMMUNITY WEED CONTROL PROGRAM

With Special Attention to the Weeds which Affect Health (Hay Fever Plants, Poison Ivy, etc.)

(Conditions and personalities vary in each community so this outline must serve only as a general guide.)

A. To get the campaign started.

Approach leaders of any civic-minded group and suggest that their organization adopt a weed control program. The group might be one of the following: Garden Club, Civic Improvement League, Kiwanis Club, Rotary Club, Lions Club, Elks Club, American Legion etc.

Suggest to the leaders that the movement be strengthened by inclusion of the other organizations named above with a member of each sitting on a community-wide general committee.

It would be necessary to get the best man or woman possible for chairmanship of this general committee. He or she should be big enough to command respect and sufficiently skilled to get the most out of committee members.

B. After adoption by one organization.

In order to line up the other groups the organization should name a strong three-man committee which will:

1. Send effective speakers to service clubs to explain necessity and feasibility of the program and ask formal support of each group.
2. Contact city officials. Ask mayor for public announcement in favor of such a campaign and get his promise that city engineer and health officer will serve on an advisory committee.
3. Contact editors of local papers for their liberal support through editorials, news and feature articles.
4. Obtain support of Boy and Girl Scout officers for future cooperation in distribution of weed control literature.
5. Ask support of Farm Bureau, 4-H Club and Home Bureau officials. Might suggest that Farm Bureau plan a training course for instruction of spraying crews. (Garden Club could teach recognition of weeds.)

C. Publicize the campaign fully.

1. Adoption of the program, naming of committees, statement from the mayor, resolutions passed in favor by other groups—these are all newsworthy stories.
2. Other suggestions for news or feature stories: statistics or estimates from health officer on prevalence of hayfever, number of people who annually suffer from poison ivy, poison sumac; general article on significance of ragweed to hayfever and the existence of an effective control for ragweed; story on success of similar movements in other cities.
3. Have attractive displays prepared and exhibited prominently in store windows, schools, postoffices, etc.
4. A humorous skit involving the periodic difficulties of hayfever sufferers or the indignities of a case of poison ivy might serve to put the point across effectively and entertainingly at a public meeting, or at meetings of civic-minded clubs.
5. Conduct contest for most humorous poster advertising the campaign. Have best entries widely exhibited.

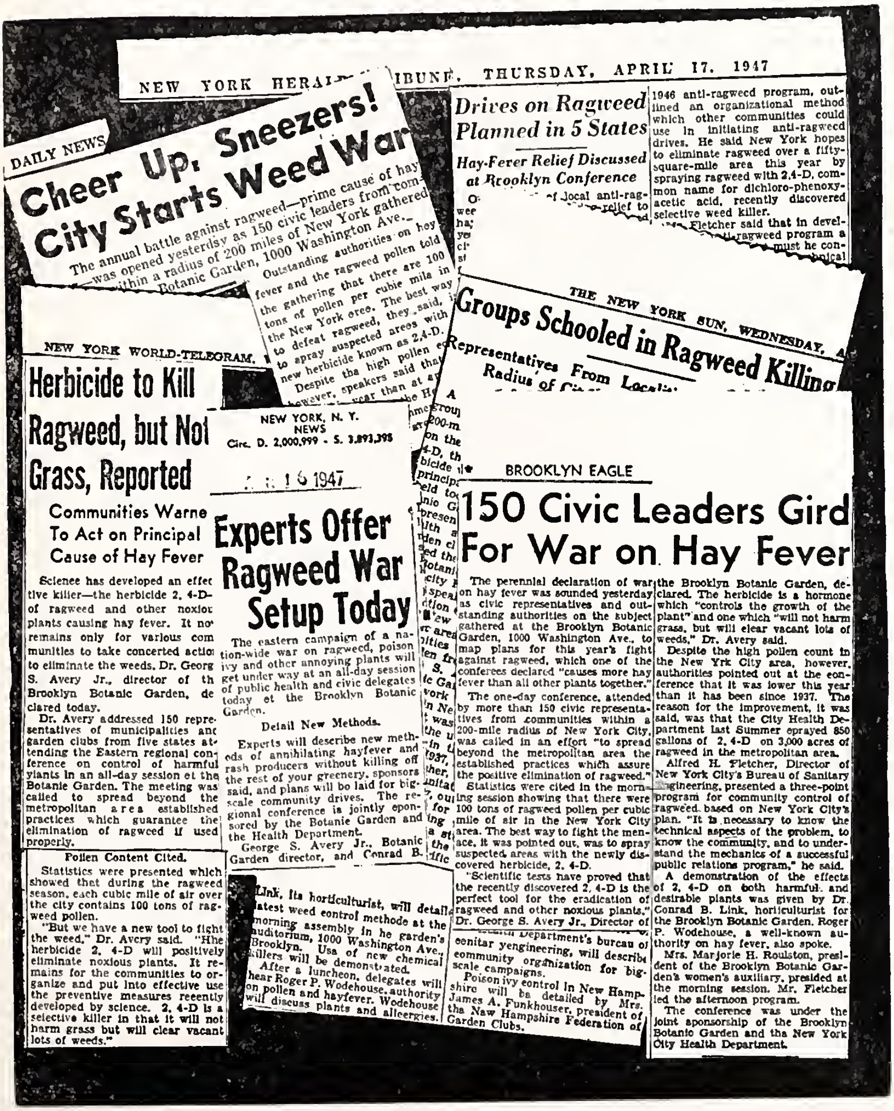
D. Conducting the Campaign.

In Durham, N.H., (See Funkhouser talk in Conference report.) no more than four people were involved in spraying operations to eliminate poison ivy. The area they covered was determined by the number of telephone requests for spraying. At the other extreme, New York City had policemen map the vacant lots on their beats. Responsibility for spraying ragweed in the city was divided between Engineering Department (public and private property) and the Park Department (undeveloped park property).

Some of the problems that must be met are:

1. Preparation of a map of the community showing infested areas, with an estimate of the amount of spraying required. This will make it possible to estimate the amount of chemical needed.
2. Definite decision on who will be responsible for spraying.
3. Survey of equipment needed. (New York City used power-operated sprayers for wide areas, pack-type sprayers for small areas and hand pumps for weeds growing close to desirable plants.)
4. Method of financing the campaign. (Allocation of city funds, popular subscription, a club or group of service clubs.)
5. Investigation of legal aspects to determine whether all areas can be sprayed, whether on public or private property.

* * *



NEW YORK HERALD TRIBUNE, THURSDAY, APRIL 17, 1947

Drives on Ragweed Planned in 5 States

Hay-Fever Relief Discussed at Brooklyn Conference

... of local anti-ragweed ... relief to ...

1946 anti-ragweed program, outlined an organizational method which other communities could use in initiating anti-ragweed drives. He said New York hopes to eliminate ragweed over a fifty-square-mile area this year by spraying ragweed with 2,4-D, common name for dichloro-phenoxy-acetic acid, recently discovered selective weed killer.

Fletcher said that in developing ... anti-ragweed program a ... must he con- ... technical

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DAILY NEWS

Cheer Up, Sneezers! City Starts Weed War

The annual battle against ragweed—prime cause of hay fever—was opened yesterday as 150 civic leaders from communities within a radius of 200 miles of New York gathered ... Botanic Garden, 1000 Washington Ave.

Outstanding authorities on hay fever and the ragweed pollen told the gathering that there are 100 tons of pollen per cubic mile in the New York area. The best way, they said, is to defeat ragweed, ... to spray suspected areas with new herbicide known as 2,4-D.

Despite the high pollen ... however, speakers said that ... year than at a...

THE NEW YORK SUN, WEDNESDAY, A...

Groups Schooled in Ragweed Killing

Representatives From Localities ... Radius of Cit...

NEW YORK WORLD-TELEGRAM.

Herbicide to Kill Ragweed, but Not Grass, Reported

Communities Warne To Act on Principal Cause of Hay Fever

Science has developed an effective killer—the herbicide 2, 4-D—of ragweed and other noxious plants causing hay fever. It now remains only for various communities to take concerted action to eliminate the weeds, Dr. George S. Avery Jr., director of the Brooklyn Botanic Garden, declared today.

Dr. Avery addressed 150 representatives of municipalities and garden clubs from five states attending the Eastern regional conference on control of harmful plants in an all-day session at the Botanic Garden. The meeting was called to spread beyond the metropolitan area established practices which guarantee the elimination of ragweed if used properly.

Pollen Content Cited.

Statistics were presented which showed that during the ragweed season, each cubic mile of air over the city contains 100 tons of ragweed pollen.

"But we have a new tool to fight the weed," Dr. Avery said. "The herbicide 2, 4-D will positively eliminate noxious plants. It remains for the communities to organize and put into effective use the preventive measures recently developed by science. 2, 4-D is a selective killer in that it will not harm grass but will clear vacant lots of weeds."

NEW YORK, N. Y.
NEWS
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... 1 6 1947

Experts Offer Ragweed War Setup Today

The eastern campaign of a nation-wide war on ragweed, poison ivy and other annoying plants will get under way at an all-day session of public health and civic delegates today at the Brooklyn Botanic Garden.

Detail New Methods.

Experts will describe new methods of annihilating hayfever and rash producers without killing off the rest of your greenery, sponsors said, and plans will be laid for big-scale community drives. The regional conference is jointly sponsored by the Botanic Garden and the Health Department.

George S. Avery Jr., Botanic Garden director, and Conrad B. Link, its horticulturist, will detail latest weed control methods at the morning assembly in he garden's auditorium, 1000 Washington Ave., Brooklyn. Use of new chemical killers will be demonstrated.

After a luncheon, delegates will hear Roger P. Wodehouse, authority on pollen and hayfever. Wodehouse will discuss plants and allergies.

BROOKLYN EAGLE

150 Civic Leaders Gird For War on Hay Fever

The perennial declaration of war on hay fever was sounded yesterday as civic representatives and outstanding authorities on the subject gathered at the Brooklyn Botanic Garden, 1000 Washington Ave., to map plans for this year's fight against ragweed, which one of the conferees declared "causes more hay fever than all other plants together."

The one-day conference, attended by more than 150 civic representatives from communities within a 200-mile radius of New York City, was called in an effort "to spread beyond the metropolitan area the established practices which assure the positive elimination of ragweed."

Statistics were cited in the morning session showing that there were 100 tons of ragweed pollen per cubic mile of air in the New York City area. The best way to fight the menace, it was pointed out, was to spray suspected areas with the newly discovered herbicide, 2, 4-D.

"Scientific tests have proved that the recently discovered 2, 4-D is the perfect tool for the eradication of ragweed and other noxious plants." Dr. George S. Avery Jr., Director of the Brooklyn Botanic Garden, declared. The herbicide is a hormone which "controls the growth of the plant" and one which "will not harm grass, but will clear vacant lots of weeds," Dr. Avery said.

Despite the high pollen count in the New Yrk City area, however, authorities pointed out at the conference that it was lower this year than it has been since 1937. The reason for the improvement, it was said, was that the City Health Department last Summer sprayed 850 gallons of 2, 4-D on 3,000 acres of ragweed in the metropolitan area.

Alfred H. Fletcher, Director of New York City's Bureau of Sanitary Engineering, presented a three-point program for community control of ragweed based on New York City's plan. "It is necessary to know the technical aspects of the problem, to know the community, and to understand the mechanics of a successful public relations program," he said.

A demonstration of the effects of 2, 4-D on both harmful and desirable plants was given by Dr. Conrad B. Link, horticulturist for the Brooklyn Botanic Garden. Roger P. Wodehouse, a well-known authority on hay fever, also spoke.

Mrs. Marjorie H. Roulston, president of the Brooklyn Botanic Garden's women's auxiliary, presided at the morning session. Mr. Fletcher led the afternoon program.

The conference was under the joint sponsorship of the Brooklyn Botanic Garden and the New York City Health Department.

... Department's bureau of sanitary engineering, will describe community organization for big-scale campaigns.

Poison ivy control in New Hampshire will be detailed by Mrs. James A. Funkhouser, president of the New Hampshire Federation of Garden Clubs.

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OF
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INTERNATIONAL FLOWER SHOW
EXHIBIT NUMBER

BROOKLYN BOTANIC GARDEN
LEAFLETS

NEW SERIES NO. 4 BROOKLYN, NEW YORK MARCH 8, 1948

HYBRID TEA AND FLORIBUNDA ROSE CULTURE

Conrad B. Link, Horticulturist

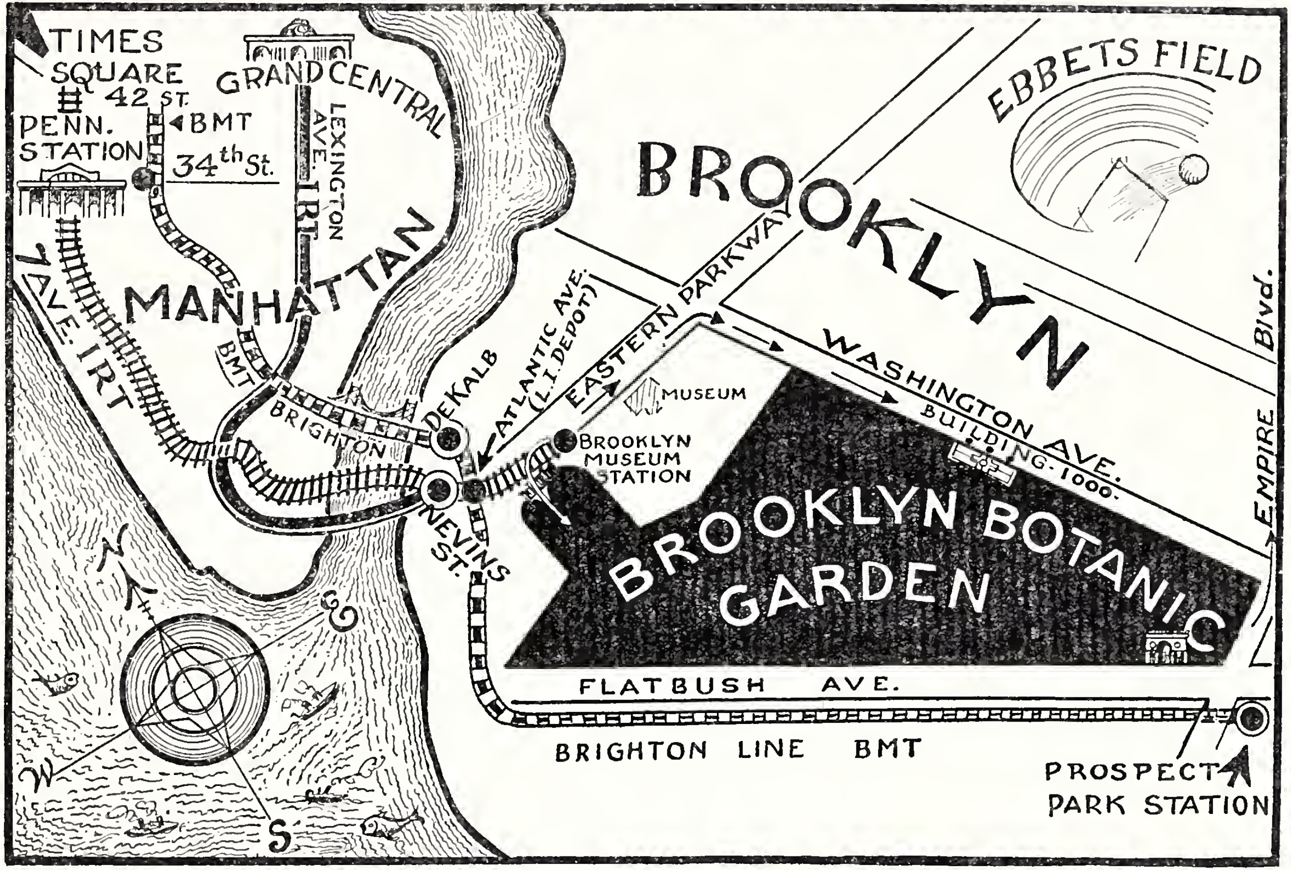
Hybrid tea roses may be grown by anyone if a few simple requirements are met and a little care given.

LOCATION. Roses should be planted in a sunny location for best results but will flower if they receive sun for at least half of the day. Do not plant close to trees or large shrubs which would compete with the rose roots for soil moisture and available soil nutrients. Also avoid planting close to buildings or walls which shade the plants and retard air movement. Air circulation is important to discourage disease, especially mildew.

SOILS. Roses will grow in any soil providing it is well drained, yet kept reasonably moist. Soils that favor best growth are loose, well aerated and fertile. Drainage is essential to success. While roses may grow in many soils and under difficult conditions, the best results are obtained by providing as near ideal soil conditions as possible. Thorough soil preparation for roses means digging a bed 2 or 3 spades (18 to 24 inches) deep. A tile or a 4 to 6 inch layer of coarse stones should be placed in the bottom to provide drainage if necessary. Fertile soil to which has been added well rotted manure to make up to as much as ¼ by volume should be placed over the drainage. Superphosphate or bonemeal is mixed in at the rate of 4 to 5 pounds per 100 sq. ft. If the original soil is of poor fertility add a complete fertilizer (4-12-4 or 5-10-5 fertilizer at the rate of 2 to 4 pounds to 100 square feet) to the top 4 to 6 inch layer and mix thoroughly. Heavy clay soil should also have sand or leached cinders added to help loosen it.

PLANTING. Roses may be planted in either the fall or spring. Fall planting is done from early or mid October until freezing weather sets in and spring planting best from mid March to mid or late April. Roses growing in pots may be planted at any season.

Rose plants should be planted as soon as possible after they are received from the nursery. Do not allow them to become dry. The hole should be large enough and deep enough to accommodate the roots without crowding. The plant is set so the bud or knob where the stem and rootstock join is just at the soil level or not more than 1 or 2 inches deep. Soil is firmed well around the roots by packing or tamping. In spring planting the tops are pruned to 6 or 8 inches of the surface, and all the small branches removed. Soil is temporarily hilled up around the stems to prevent drying out but should be carefully



SUBWAY

I. R. T. (West Side) to Eastern Parkway-Brooklyn Museum Station.

I. R. T. (East Side) to Nevins St., change for West Side.

B. M. T. Brighton Beach express or local to Prospect Park Station.

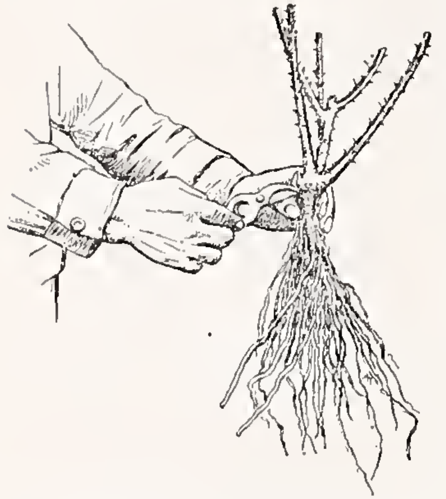
AUTO

From Long Island, take Eastern Parkway west and turn left at Washington Avenue.

From Manhattan, take Manhattan Bridge, follow Flatbush Avenue to Eastern Parkway, follow the Parkway to Washington Avenue, then turn right.

removed in 3 or 4 weeks. In fall planting usually no pruning is necessary until spring. The usual winter protection is provided.

Hybrid tea and floribunda roses are planted about 18 inches apart although the strong vigorous growing varieties should be kept 24 inches apart.



Pruned rose plant ready for planting—showing point of union of stock and scion.

PRUNING. Hybrid tea and floribunda roses are pruned in the spring after the winter protection has been removed. The dead and weak growing branches should be removed first, cutting them back to healthy live wood leaving no stub. The remaining vigorous shoots are cut back, the extent varying with the desire of the gardener. In general stems with 6 to 8 buds on each will produce a large number of good flowers. If many flowers are desired for garden display then remove only the tips leaving the vigorous shoots as long as possible but generally not more than 12 to 15 inches. If long stem hybrid tea roses of exhibition quality are desired then leave only 3 or 4 buds on each vigorous cane and only 2 or 3 canes at the most per plant.

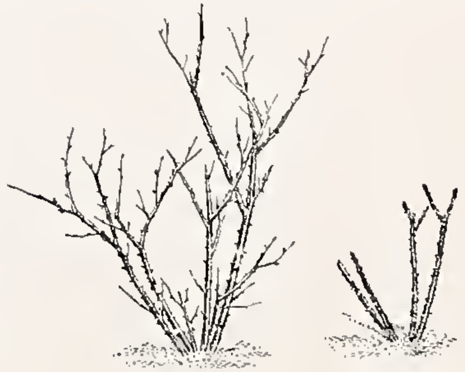
SUMMER CARE. During the growing season the soil should be cultivated frequently enough to keep it loose and to control weeds. A light mulch of peat, leaf mold, or similar material is helpful.

Roses should not lack for water. When the soil is dry, water thoroughly. Light surface sprinkling is of no value. It is desirable to water in such a way that the foliage is not moistened although this is not always possible. Moisture on the foliage, especially overnight, favors the spread of disease.

In order to obtain as many flowers as possible keep the old flowers removed. Cut them off just above the upper 5 leaflet leaf.

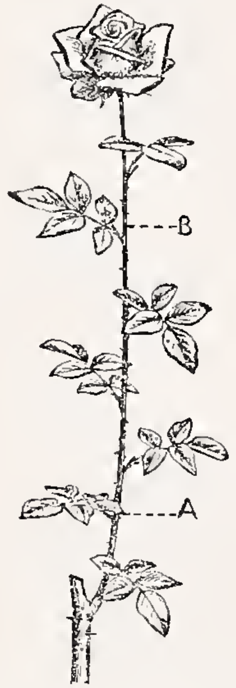
Usually little or no fertilizer is necessary the first year after planting if the soil is well prepared. A light fertilizer application (1 pound of a complete fertilizer to 100 sq. ft.) may be given in mid or late June following the first crop of flowers.

Plants which have become established are fertilized regularly. In the spring as much as possible of the manure which has been used for winter protection should be worked into the soil. A complete fertilizer may be applied such as 4-12-4 or 5-10-5 at the rate of 2 to 3 pounds to 100 sq. ft.



Hybrid tea rose:—left, unpruned; right, pruned.

A second application of 1 pound to 100 sq. ft. is made in June after the spring bloom or an application of ammonium sulphate at the rate of 1 pound to 100 sq. ft. to stimulate growth. This may be applied again in late August or early September, but never later than the middle of September. In areas which have frosts in early or mid October this fall application should be omitted. If growth is too strong and succulent in the fall the plant is more easily killed.



Cutting roses:—For long stems cut at *A* leaving 2 leaves. The next flower will come from shoots developing at the base of these leaves. If the flower is not cut, then when the petals fall remove the old bloom at *B*.

WINTER PROTECTION. Hybrid tea and floribunda roses should have protection during the winter. In November before the ground freezes a mound of soil should be made around the base of the plant to a height of 8 to 10 inches. This protects the most vital part of the plant. Later, after the ground is frozen, cover the plants with straw, strawy manure, salt hay, loose garden litter, corn stalks, evergreen branches or similar material. In March remove the coarse top mulch and, several weeks later, the mounds of soil.

Soil mound for winter protection.

Additional winter protection.

PESTS. The best control of pests is good culture to produce healthy vigorous plants. Well grown plants are less susceptible to attack. Mildew, black spot and canker are the three most common diseases. Massey Dust, which is made of 9 parts dusting sulphur and 1 part arsenate of lead is an effective fungicide. Fermate is especially effective against black spot. Sulphur may be combined with the fermate to increase the effectiveness of control against both mildew and black spot. Bordeaux mixture is satisfactory but the residue which it leaves on the foliage is sometimes objectionable. Canker is kept in check by the sprays or dusts used in controlling the other diseases and by careful pruning.

Aphids and leafhoppers are insects controlled by contact insecticides. Nicotine sulphate sprays or dusts are most effective. Chewing insects are controlled with stomach poisons. Arsenate of lead and DDT are effective controls for Japanese beetle, rose beetle and other leaf-eating insects.

Pest control on roses should be started when it is first discovered. For mildew and black spot begin as soon as the foliage is fully expanded and then at intervals of 10 to 14 days. During periods of rainy weather sprays or dusts should be applied weekly. Regular spraying is necessary until the fall.

ABOUT PLANT GROWTH HORMONES

There have been hundreds of inquiries about the use of plant hormones following the Brooklyn Botanic Garden Flower Show Exhibit of 1946.

We are pleased to announce that a recent book covers the subject:
HORMONES & HORTICULTURE, by George S. Avery, Jr., Elizabeth B. Johnson, Ruth M. Addoms and Betty F. Thomson.

The book is semi-technical, but will be readily understood by the well-informed amateur. Some of the subjects covered are:

Hormones and rooting of cuttings
Hormones and weed control
Seedless fruit production
Control of fruit set and preharvest drop
Breaking and prolonging of dormancy
Chemical production of new varieties

Profusely illustrated, the volume contains widely-scattered information on the subject. The authors present specific directions for applying chemicals, and evaluate their usefulness in horticultural practice.

Copies, $4.50 each, may be ordered from

The Brooklyn Botanic Garden, Brooklyn 25, N. Y.
or
The McGraw-Hill Co., Inc., 330 West 42nd St., New York 18, N. Y.
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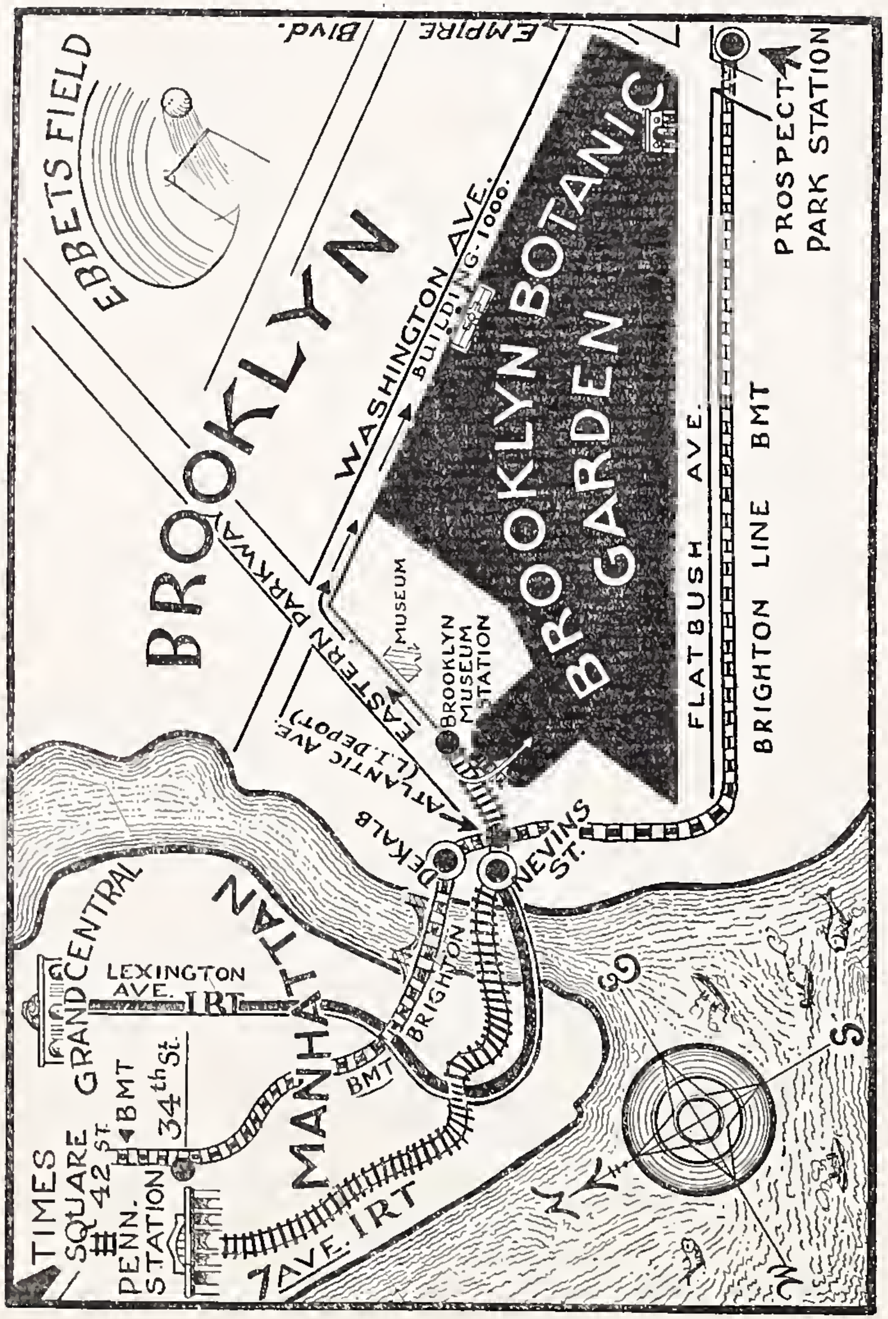

SUBWAY

I. R. T. (West Side) to Eastern Parkway-Brooklyn Museum Station.

I. R. T. (East Side) to Nevins St., change for West Side.

B. M. T. Brighton Beach express or local to Prospect Park Station.

AUTO

From Long Island, take Eastern Parkway west and turn left at Washington Avenue.

From Manhattan, take Manhattan Bridge, follow Flatbush Avenue to Eastern Parkway, follow the Parkway to Washington Avenue, then turn right.

VARIETIES

The following is a list of varieties which have done well in the Rose Garden at the Brooklyn Botanic Garden:

FLORIBUNDAS

PINK	RED	YELLOW
Betty Prior	World's Fair	Goldilocks
Salmon Spray	Donald Prior	
Pinocchio	Holstein	
Smiles	Permanent Wave	WHITE
Else Poulsen	Red Ripples	
	Chatter	Summer Snow

HYBRID TEAS

PINK	RED	YELLOW
Edith M. Perkins	Charles K. Douglas	Mrs. E. P. Thom
Imperial Potentate	Chateau de Clos Vougeot	McGredy's Yellow
Killarney Queen	Christopher Stone	Mrs. Pierre S. du Pont
Lady Alice Stanley	Etoile de Hollande	Soeur Therese
Mme. Butterfly	Margaret McGredy	Lowell Thomas
Picture	Poinsettia	Diamond Jubilee
Mme. Leon Paine	Red Radiance	Mme. Marie Curie
Pink Dawn	Crimson Glory	Eclipse
Mrs. Charles Bell	Grand Duchess Charlotte	
Katherine T. Marshall	Heart's Desire	
Mary Margaret McBride	Mrs. Miniver	
Ophelia	Will Rogers	

WHITE-BLUSH-CREAM	MULTICOLOR
Caledonia	Betty Uprichard
Marcia Stanhope	Condesa de Sastago
Margaret Anne Baxter	Duquesa de Penaranda
Mme. Jules Bouche	Talisman
Neige Parfum	Countess Vandal
Lily Pons	McGredy's Sunset
	Peace

(Plants for this exhibit were provided by Jackson & Perkins Co., Newark, N. Y. and Bobbink & Atkins, East Rutherford, N. J.)

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Goldilocks

WHITE

Summer Snow

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INTERNATIONAL FLOWER SHOW
EXHIBIT NUMBER

BROOKLYN BOTANIC GARDEN
LEAFLETS

NEW SERIES NO. 5 BROOKLYN, NEW YORK MARCH 21, 1949

DWARF PLANTS FOR CONTEMPORARY GARDENS

Dwarf plants make ideal material whether in the mild climate of Long Island, or the more vigorous climates away from the shore. They are especially suitable for rock gardens, foundation plantings, and terraces. They grow so slowly that they rarely need replacing because of outgrowing their situations.

The dwarf narrow-leaved evergreens make excellent accent plants, and provide variety in texture as well as interesting color.

Dwarf forms of Rhododendron, Abelia, Spirea, and other flowering shrubs add color during the growing season; and many of them bloom when only a year or so old.

The smaller dwarfs, like some of the Heaths and the miniature Roses, make charming little foreground plants which are of interest to all garden enthusiasts.

Among spring-flowering bulbs for the rock garden are dwarf forms of Tulip, Daffodil, Bulbous Iris, and Fritillary.

The very small shrubs that grow only a few inches tall might be lost in the garden, but are very attractive planted in stone troughs, or old stone sinks, with two or three of the choicer alpine plants. Used along terraces, these troughs are very decorative.

Perhaps as collectors' items, these dwarf shrubs or trees are the most exciting. The fun of coming across them in horticultural literature, and then trying to trace them to some nursery or other place where they may be obtained, adds to their interest. Another fact in their favor is that nearly all of them are hardy and so do not need a greenhouse, as Orchids and certain other collectors' items do.

The plants mentioned here are *natural dwarfs,* that is, they grow very slowly and are usually dense and compact even when given the best conditions for maximum growth. Their dwarf character is as much a part of their heredity as the form of their foliage, and is in no way influenced by man or by culture. Entirely separate and distinct are the artificially dwarfed specimens of plants that naturally grow tall—such as the famous Japanese dwarf trees. Artificial dwarfing, as a result of grafting or special cultural practices, is quite apart from natural dwarfing.

Dwarf plants differ from the usual growing types in several ways, other than being slow-growing and compact. They usually have smaller and more numerous leaves, and very prolific branching. Many of them have a habit of spreading close to the ground instead of growing upright. Flowering frequently occurs when the plants are very young.

The degree of dwarfism varies considerably. Some plants are only semi-dwarf, others are very dwarf in habit; some are called miniatures. In the collection of dwarfs at the Brooklyn Botanic Garden we have many true dwarfs; few of our specimens ever reach a height of 6 feet. An exception is the Swiss Stone Pine (*Pinus Cembra*), which is frequently considered of dwarf habit, though it may ultimately reach a height of 15 feet or more. One specimen, about 50 years old, is only 13 feet high. At the other extreme is the Bearberry Willow (*Salix Uva-ursi*), which rarely grows more than a few inches high; a 5-year-old specimen at the Garden is only ¾ inch tall.

Dwarf plants should have a place in your garden.

The autumn issue of PLANTS & GARDENS, official quarterly magazine of the Botanic Garden, will be devoted especially to dwarf plants.

Following is a list of the plants in the exhibit. Cultural procedures are generally the same as for the more rapidly growing members of the groups to which they belong. With one or two exceptions, the plants were obtained in this country, even though the original stock came from other parts of the world.

TRUE DWARFS

Common names in *italics*.

No.	Name		Age Years	Height Inches	Width Inches	Native
1	Alyssum spinosum *Madwort*		10	5	12	Europe
2	Andromeda polifolia var. montana	A	1	1½	1	Europe
	Bog Rosemary	B	4	5½	4	
3	Astilbe crispa var. Gnome *Astilbe*		2	—	—	C. & E. Asia
4	Bruckenthalia spiculifolia	A	1	1½	—	Europe
	Spike-heath	B	4	2½	3	
5	Buxus microphylla var. compacta	A	6	5	6	Japan
	Box	B	9	6	9	
		C	2	9	11	
		D	7	12	16	
6	Buxus sempervirens var. suffruticosa *Common Box*		9	7	4	Europe
7	Calluna vulgaris var. Foxii nana	A	1	¾	1	Europe
	Dwarf Heather	B	4	2	3½	
8	Calluna vulgaris var. J. H. Hamilton	A	1	1¾	—	Europe
	Dwarf Heather	B	4	3	4	
9	Calluna vulgaris var. nana compacta	A	1	1¼	—	Europe
	Dwarf Heather	B	4	2½	2½	
10	Calluna vulgaris var. rigida	A	1	1½	—	Europe
	Heather	B	4	2	2½	

No.	Name		Age Years	Height Inches	Width Inches	Native
11	Chamaecyparis Lawsoniana var. Fletcheri nana compacta *Dwarf Lawson Cypress*		15	6	8	Ore. & Cal.
12	Chamaecyparis obtusa var. minima *Golf Ball Cypress*		10	1	2	Japan
13	Chamaecyparis obtusa var. nana *Dwarf Hinoki Cypress*	A	6	12	9	Japan
		B	7	14	10	
14	Chamaecyparis obtusa var. juniperoides *Golf Ball Cypress*		10	1	2	Japan
15	Chamaecyparis obtusa var. juniperoides compacta (Cupressus juniperoides compacta) *Golf Ball Cypress*		15	1	2	Japan
16	Chamaecyparis obtusa var. pygmaea *Dwarf Hinoki Cypress*		5	10	15	Japan
17	Chamaecyparis pisifera var. aurea nana *Golden Sawara Cypress*		5	5	2	Japan
18	Chamaecyparis pisifera var. plumosa compressa (Cupressus pisifera var. plumosa nana compressa) *Dwarf Sawara Cypress*		10	3	3	Japan
19	Chamaecyparis pisifera var. squarrosa nana *Dwarf Sawara Cypress*		10	7	15	Japan
20	Cotoneaster adpressa var. praecox *Cotoneaster*	A	8	7	12	W. China
		B	10	10	18	
21	Cotoneaster Dammeri (C. humifusa) *Cotoneaster*		4	4	15	C. China
22	Cryptomeria japonica var. Vilmoriniana *Cryptomeria*		5	5	4	Japan
23	Daboecia cantabrica *Irish Heath*	A	1	2	1½	W. Europe
		B	4	3	4½	
24	Daphne Cneorum *Daphne*		3	7	9	Mts. C. Europe
25	Erica carnea var. Ruby Glow *Heath*	A	1	1	—	Europe
		B	4	3	5	
26	Erica carnea var. Springwood White *Heath*	A	1	1½	1	Europe
		B	4	4½	6	
27	Erica vagans var. alba *Cornish Heath*	A	1	1½	—	W. Europe
		B	4	4	4	
		C	8	8	15	
28	Euonymus Fortunei var. gracilis (var. variegatus) *Variegated Euonymus*		3	7	18	Europe

No.	Name		Age Years	Height Inches	Width Inches	Native
29	Euonymus Fortunei var. radicans minimus *Creeping Euonymus*	A	2	7	10	N. & C. Japan & China
		B	3	3	13	
		C	4	4	17	
30	Forsythia Arnold Dwarf *Dwarf Forsythia (non-blooming)*	A	2	6	7	United States
		B	4	8	14	
31	Forsythia viridissima var. bronxensis *Dwarf Forsythia*		3	4	8	United States
32	Gaylussacia brachycera *Box Huckleberry*	A	1	2	3	Pa. & Va.
		B	4	4	5	
		C	6	6	12	
33	Hedera Helix var. conglomerata *English Ivy*	A	2	3	5	Europe-Asia
		B	8	6	18	
34	Hedera Helix var. meageri *English Ivy*	A	1	1½	—	Europe-Asia
		B	4	2	4	
35	Hedera Helix var. Merion Beauty *English Ivy*		1	5	—	Europe-Asia
36	Hedera Helix var. minima (erecta) *English Ivy*	A	1	1¾	—	Europe-Asia
		B	4	2½	4	
37	Helianthemum Apricot Queen *Sun Rose*	A	1	2½	—	S. Europe
		B	4	3½	5	
38	Iberis sempervirens *Edging Candytuft*		5	7	9	S. Europe to W. Asia
39	Ilex crenata var. Helleri *Japanese Holly*	A	5	4	7	Japan
		B	6	6	9	
		C	8	7	15	
		D	20	16	34	
40	Ilex crenata var. Kingsville *Japanese Holly*	A	5	6	8	United States
		B	10	7	12	
41	Jasminum Parkeri *Jasmine*		5	10	20	Himalayas
42	Juniperus chinensis *Juniper*		7	10	36	New York & New England
43	Juniperus chinensis var. plumosa *Juniper*		5	8	27	China
44	Juniperus conferta (J. litoralis) *Shore Juniper*		6	10	30	Japan & Saghalin
45	Juniperus horizontalis var. Bar Harbor *Creeping Juniper*	A	4	5	20	United States
		B	6	6	26	
		C	7	10	30	
		D	8	7	34	
		E	9	8	46	
46	Juniperus horizontalis var. Douglasii *Waukegan Juniper*		3	12	24	United States

No.	Name		Age Years	Height Inches	Width Inches	Native
47	Juniperus (S. Everett) *Everett Juniper*		8	6	10	—
48	Leiophyllum buxifolium *Box Sand-Myrtle*		6	15	18	N. America
49	Pachistima Canbyi	A	2	4	7	Mts. of Va.
	Pachistima	B	4	7	12	
		C	10	12	18	
50	Pernettya mucronata *Pernettya*		5	6	4	Chile
51	Picea Abies var. Gregoryana *Dwarf Norwoy Spruce*		10	15	24	Europe
52	Picea Abies var. Maxwellii *Dwarf Norwoy Spruce*		14	9	14	Europe
53	Picea Abies var. nidiformis	A	6	9	9	Germany
	Dworf Norway Spruce	B	14	15	15	
54	Picea Abies var. Ohlendorffii	A	10	13	10	Europe
	Dworf Norway Spruce	B	14	18	15	
55	Picea Abies var. pumila	A	4	5	5	Europe
	Dwarf Norwoy Spruce	B	5	5	12	
		C	8	11	14	
56	Picea Abies var. pygmaea *Dwarf Norway Spruce*		4	4	5	Europe
57	Pinus Strobus var. nana	A	5	9	10	Europe
	Dwarf White Pine	B	15	22	26	
		C	20	22	26	
		D	20	28	36	
		E	25	28	38	
58	Prunus *Dwarf Plum*		2	5	3	—
59	Rhododendron impeditum *Miniature Rhododendron*		10	4	4	Yunnan
60	Rhododendron myrtifolium *Rhododendron*		8	14	20	Europe
61	Rhododendron racemosum	A	10	9	13	China
	Dwarf Rhododendron	B	12	22	20	
		C	14	24	35	
		D	15	24	42	
62	Rhododendron racemosum var. G. G. Nearing *Dworf Rhododendron*		4	2	2	China
63	Rosa chinensis var. minima (R. Roulettii)	A	5	6	5	China
	Pygmy Rose					
	Pixie	B	5	8	6	
	Red Elf	C	5	8	6	
	Sweet Fairy	D	5	8	6	
	Tom Thumb	E	5	8	6	
64	Salix Uva-ursi	A	1	¼		Alaska to Labrador, to Mts. of N. Y.
	Bearberry Willow	B	4	¾	¾	

No.	Name		Age Years	Height Inches	Width Inches	Native
65	Spiraea Normandii		3	2	2	Japan
	Dwarf Spirea					
66	Syringa velutina (S. Palibiniana)		7	6	3	China
	Lilac					
67	Taxus baccata var. repandens		6	14	34	Europe
	Dwarf English Yew					
68	Taxus cuspidata (chance seedlings)	A	20	18	18	Japan
	Dwarf Japanese Yew	B	22	22	22	
69	Taxus cuspidata var. densa		6	17	25	Japan
	Dwarf Japanese Yew					
70	Taxus cuspidata var. nana		6	17	25	Japan
	Dwarf Japanese Yew					
71	Thuja occidentalis var. globosa		4	14	12	N. S. to N. C.
	American Arbor Vitae					& Ill.
72	Thuja orientalis var. aurea nana		4	16	8	China
	Oriental Arbor Vitae					
73	Thuja orientalis var. elegantissima		7	5	4	China
	Oriental Arbor Vitae					
74	Thuja orientalis var. Fruitlandii	A	6	20	12	China
	Oriental Arbor Vitae	B	7	22	15	
75	Thujopsis dolabrata var. nana	A	2	5	6	Japan
	False Arbor Vitae	B	6	11	11	
76	Tsuga canadensis var. nana	A	4	4	10	N. America
	(var. minima)	B	10	8	15	
	Canada Hemlock					
77	Tsuga canadensis var. pendula		6	21	17	Europe
	(T. Sargentii)					
	Sargent's Weeping Hemlock					
78	Vaccinium Vitis-idaea	A	1	1½	—	Europe,
	Cowberry	B	4	4½	4	N. Asia
	Foxberry					
79	Viburnum Carlesii	A	3	10	13	Korea
	Viburnum	B	4	13	15	
80	Viburnum Opulus var. nanum	A	4	10	15	Europe
	European Cranberry Bush	B	5	12	18	

SMALL SHRUBS AND TREES

81	Abelia grandiflora		3	20	25	China
	Glossy Abelia					
82	Berberis (hybrida)		15	18	20	United States
	Hybrid Barberry					
83	Berberis Julianae		8	16	17	China
	Wintergreen Barberry					
84	Berberis Thunbergii var. atropurpurea	A	3	24	10	Japan
	Japanese Barberry	B	4	26	20	

No.	Name		Age Years	Height Inches	Width Inches	Native
85	Chaenomeles lagenaria *Japanese Quince*		8	34	50	China
86	Cotoneaster horizontalis *Rock Cotoneaster*		3	9	16	China
87	Cotoneaster microphylla *Cotoneaster*		3	24	9	Himalayas
88	Cytisus canariensis var. ramosissimus *Genista*		2	7	7	Canary Is.
89	Deutzia gracilis *Deutzia*		3	15	18	Japan
90	Erica darleyensis *Winter Heath*	A	1	1	1	Europe
		B	4	5½	4	
91	Euonymus nanus *Euonymus*	A	4	6	5	W. Asia, W. China
		B	8	11	10	
92	Ilex crenata var. convexa *Japanese Holly*	A	7	16	24	Japan
		B	10	26	35	
		C	15	32	60	
93	Ilex glabra *Winterberry* *Inkberry*		5	18	17	E. United States
94	Juniperus excelsa var. stricta *Greek Juniper*		4	27	10	S. W. Europe & Asia
95	Leucothoe axillaris *Leucothoe*		6	15	21	Va. to Fla. & Ala.
96	Ligustrum japonicum var. rotundifolium (L. coriaceum) *Evergreen Privet*		12	36	18	Japan
97	Malus *Apple (dwarf eating)*		3	75	18	United States
98	Malus (Sotira) *Dwarf Apple*		2	24	10	United States
99	Picea Abies var. Clanbrasiliana *Dwarf Norway Spruce*		4	6	7	Europe
100	Pieris floribunda *Pieris*		6	12	16	Va. to Ga.
101	Pinus Cembra *Swiss Stone Pine*	A	10	24	15	Europe, N. Asia
		B	20	40	24	
		C	25	40	24	
102	Pinus *Pine*		10	20	12	—
103	Prunus—Hally Jolivette *Ornamental Cherry*		1	12	6	United States
104	Rhododendron carolinianum *Carolina Rhododendron*		4	12	10	N. Carolina
105	Sarcococca Hookeriana var. humilis *Sarcococca*	A	3	8	8	W. China
		B	5	9	10	
106	Spiraea Bumalda *Anthony Waterer Spirea*		3	18	18	United States

No.	Name	Age Years	Height Inches	Width Inches	Native
107	Spiraea Thunbergii *Spirea*	3	20	16	China
108	Tsuga canadensis var. atrovirens *Hemlock*	10	12	32	N. America
119	Cytisus scoparius *Scotch Broom*	4	30	8	Europe
120	Erica carnea var. King George *Heath*	10	8	6	Europe
121	Pyrus communis *Espalier Pear*	6	50	30	Europe
122	Rhododendron maximum *Dwarf variety "Curley-leaf"*	8	20	20	E. U. S.

DWARF VARIETIES OF BULBS

109	Erythronium (mixed) *Trout Lily* *Dog-tooth Violet*				Canada to Florida
110	Fritillaria meleagris var. alba *Checkered Lily* *Snakes-head*				Europe-Asia
111	Iris reticulata *Dwarf Bulbous Iris*				Caucasus
112	Narcissus juncifolius *Daffodil*				S. France, Spain, Portugal
113	Narcissus triandrus albus *Daffodil*				Spain, Portugal
114	Narcissus triandrus var. Thalia *Daffodil*				Spain, Portugal
115	Tulipa chrysantha *Tulip*				Persia
116	Tulipa dasystemon *Tulip*				Turkestan
117	Tulipa Kaufmanniana *Tulip*				Turkestan
118	Tulipa Marjolettii *Tulip*				Savoy

The following individuals and organizations have had a share in making possible this exhibit of dwarf plants:

The Arnold Arboretum, Boston, Massachusetts
Abraham A. Bernhardt, Brooklyn, New York
Conard-Pyle Co., West Grove, Pennsylvania
Gulf Stream Nurseries, Inc., Wachapreague, Virginia
Joseph B. Gable Nurserymen, Stewartstown, Pennsylvania
Hicks Nurseries, Westbury, Long Island
Kew Gardens, London, England
Kingsville Nurseries, Kingsville, Maryland
Le Bars Nursery, Stroudsburg, Pennsylvania
Mayfair Nurseries, Bergenfield, New Jersey
Henry Leuthardt, Portchester, New York
New York Botanical Garden, Bronx, New York
Poughkeepsie Nurseries, Poughkeepsie, New York
Princeton Nurseries, Princeton, New Jersey
D. Sotira, Brooklyn, New York
Carl Starker Nurseries, Jennings Lodge, Oregon
Wayside Gardens, Glen Head, Long Island
Elizabeth C. White, Whitesbog, New Jersey

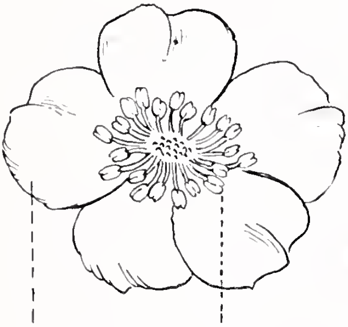
INTERNATIONAL FLOWER SHOW
EXHIBIT NUMBER

Brooklyn Botanic Garden
LEAFLETS

New Series No. 6 Brooklyn, New York March 20, 1950

THE ROSE FAMILY

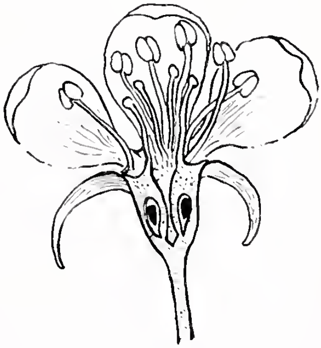
Without the members of the Rose family there would be no apple-sauce, no strawberry shortcake, raspberry jam or cherry pie. There would be no juicy peaches, golden pears or blackberry seeds; nectarines and plums would be non-existent. And where would love be without apple-blossom time or a dozen red roses? Imagine Grandmother's garden without a bush of bridal wreath, or England without hawthorns! Yes, life would be somewhat less pleasant without the members of the Rose family for they are important to the mind, the heart, and to purse and palate.



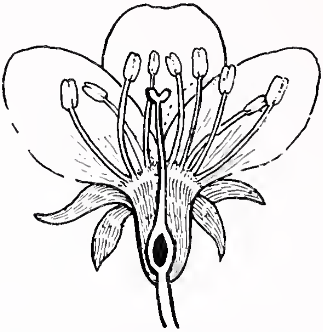
Typical Rose Flower

WHY A ROSE?

It has been said that thorns were given to the rose to protect its jewel-like beauty, but it is not the thorn that makes the rose. Nor is it outward appearance, for some members of this family are trees, some are shrubs, and some are low-growing herbaceous plants; still others are almost vine-like in growth habit. A Rose is a Rose (family-wise) because of the structure of its blossom. The members of this family have flowers consisting of five petals and five sepals, and many distinct stamens. The pistils may be one or many. The peach, for example, has but one pistil from which a single seed is produced, but the apple has many pistils, and from them are produced the many seeds which the fruit contains. Flower color in the members of the Rose family varies from


Sectional view through apple or pear type blossom

the deepest of reds, through pink and white, to yellow. Pink seems to be the predominating color, and blue is rare. Though the fruits produced by the members of the family are quite varied in appearance and construction they have little to do with determining the relationship of these plants. It is flower structure that counts.



Sectional view through cherry, peach or plum type blossom

ROSES YOU KNOW

Some of the most familiar ornamental plants are members of the Rose family.

ORNAMENTAL TREES

Flowering Peach
Flowering Cherry
Flowering Crabapple
Hawthorn
Shadbush
Mountain Ash

ORNAMENTAL SHRUBS

Flowering Almond
Flowering Quince
Spirea
Firethorn
Cotoneaster
Pearl-Bush

MORE ROSES

The more than one hundred different plants appearing in the Brooklyn Botanic Garden's 1950 Flower Show Exhibit are members of the Rose family. Most are ornamentals, many are fruit producers, and some are creeping ground covers. But nearly all of these plants are useful in the home garden. Of the more than 3,200 species which constitute this family, about 1/30th are on exhibition. They represent thirty-four of the approximately 115 subgroups or genera of the Rose family.

The numbers below correspond to those appearing on the exhibited plants.

FLOWERING TREES

1 Amelanchier laevis var. rosea
Service Berry, June Berry
Shadbush, Shadblow

2 Chaenomeles sinensis
Chinese Quince

3 Crataegus phaenopyrum
Washington Thorn

4 Crataegus oxyacantha
English Hawthorn

5 Malus sieboldi var. arborescens

6 Malus sieboldi (red fruited var.)
Toringo Crabapple

7 Malus sieboldi (yellow fruited var.)
Toringo Crabapple

8 Malus toringoides

9 Prunus serrulata var. kiku-shidare
Weeping Flowering Cherry

10 Prunus serrulata var. tanko-shinja
Flowering Cherry Pink Pearl

11 Pyrus betulaefolia
Flowering Pear

12 Sorbus hosti
Mountain Ash (hybrid form)

FLOWERING SHRUBS

13 Amelanchier stolonifera
Service Berry, June Berry
Shadbush, Shadblow

14 Chaenomeles japonica var. Stanford Red
Flowering Quince

15 Exochorda racemosa
Pearl Bush

16 Malus sargenti
Sargent's Crab

17 Neillia sinensis

18 Neviusia alabamensis
Snow Wreath

19 Photinia villosa

20 Photinia villosa var. laevis

21 Prunus laurocerasus var. schipkaensis
Cherry Laurel

22 Prunus triloba var. plena
Flowering Almond

23 Prunus "Hally Jolivette" (hyb.)
Dwarf Flowering Cherry

24 Rhodotypos tetrapetala
Jetbead

25 Rubus odoratus
Flowering Raspberry

26 Rubus laciniatus
Cutleaf or Evergreen Blackberry

27 Sorbaria aitchisoni

28 Spiraea bullata

29 Spiraea bumalda (hyb.)
Anthony Waterer Spirea

30 Spiraea normandi
Dwarf form of *Anthony Waterer Spirea*

31 Spiraea latifolia
Broadleaf Meadowsweet

32 Spiraea thunbergi

33 Spiraea japonica ruberrima

34 Stephanandra incisa

PRODUCERS OF EDIBLE FRUIT

35 Cydonia oblonga
Orange Quince

36 Fragaria chiloensis var. ananassa
Strawberry

37 Fragaria vesca
Alpine Strawberry,
Everbearing Strawberry

38 Fragaria virginiana
Wild Strawberry

39 Malus sylvestris
Apple

40 Prunus avium var. Windsor
Windsor Sweet Cherry

41 Prunus persica var. Elberta
Elberta Peach

42 Prunus persica var. Golden Jubilee
Golden Jubilee Peach

43 Prunus maritima
Beach Plum

44 Prunus domestica var. Burbank
Burbank Plum

45 Prunus domestica var. Stanley Prune tree
Stanley Prune

46 Rubus loganobaccus
Thornless Boysenberry

47 Rubus "Eldorado"
Blackberry

48 Rubus "Latham"
Red Raspberry

49 Rubus cuneifolius
Sand Blackberry, Sand Bramble

HERBACEOUS PLANTS FOR ROCK GARDEN AND BORDER

50 Acaena microphylla
New Zealand Bur

51 Alchemilla vulgaris
Lady's Mantle

52 Dryas suendermanni

53 Filipendula hexapetala
Meadowsweet, Drop-wort

54 Geum borisi

55 Geum pyrenaicum

56 Geum borisi var. Vaights Brilliant

57 Potentilla tommasiniana

58 Potentilla recta var. sulphurea

59 Potentilla tridentata

60 Potentilla alba

61 Potentilla nepalensis

62 Potentilla verna nana

63 Potentilla pyrenaica

64 Potentilla rupestris

65 Potentilla tormentillo-formosa

66 Potentilla nevadensis

SHRUBS FOR FOLIAGE AND ORNAMENTAL FRUIT

67 Cotoneaster acutifolia

68 Cotoneaster ambigua

69 Cotoneaster apiculata

70 Cotoneaster foveolata

71 Cotoneaster divaricata

72 Cotoneaster dielsiana

73 Cotoneaster dielsiana var. elegans

74 Cotoneaster hymalaica

75 Cotoneaster melanocarpa

76 Cotoneaster obscura

77 Cotoneaster racemiflora

78 Cotoneaster rotundifolia

79 Cotoneaster rosea

80 Cotoneaster salicifolia

81 Prinsepia sinensis

82 Prinsepia uniflora

83 Pyracantha coccinea
Firethorn

LOW-GROWING SHRUBS FOR SPECIAL USES

84 Cotoneaster adpressa

85 Cotoneaster adpressa var. praecox

86 Cotoneaster dammeri

87 Cotoneaster horizontalis
Rock Spray

88 Cotoneaster horizontalis var. minor
Dwarf Rock Spray

89 Cotoneaster microphylla

90 Potentilla fruticosa

91 Potentilla fruticosa var. tenuiloba

PLANTS OF LIMITED USE IN LANDSCAPE PLANTING

92 Aronia arbutifolia
Red Chokeberry

93 Dalibarda repens

94 Gillenia trifoliata
Indian Physic

95 Physocarpus opulifolius
Ninebark

96 Physocarpus opulifolius var. nanus
Dwarf Ninebark

97 Sanguisorba canadensis
Burnet

98 Waldsteinia fragarioides
Barren Strawberry

SOUTHERN PLANTS

99 Eriobotrya japonica
Loquat, Japanese Plum

100 Raphiolepis umbellata
Yeddo-Hawthorn

101 Rubus reflexus

102 Stranvaesia davidiana